

ALTERNATE COKE FURNACE TUBE ARRANGEMENT

Abstract of the Disclosure

It has been discovered that the tubes within a radiant heating section of a coking furnace can be advantageously arranged differently than in a single vertical column and connected together in a simple, planar serpentine pattern. By arranging the tubes in a plurality of offset or staggered vertical columns, the same number of tubes can be contained in a shorter vertical space with savings in the size of the coking furnace. This arrangement permits the upper tubes to be closer to the radiant heat source thus making the heating of the feedstock more efficient, and also allows the tube bends connecting adjacent tubes to be of greater radius, meaning that the pressure at which the feedstock is passed through the tube bundle can be lower allowing more vaporization of the cracked process fluids. The tendency for coke to deposit on the interior walls of the tubes is reduced, increasing operational availability and lowering maintenance costs for cleaning out the tubes.